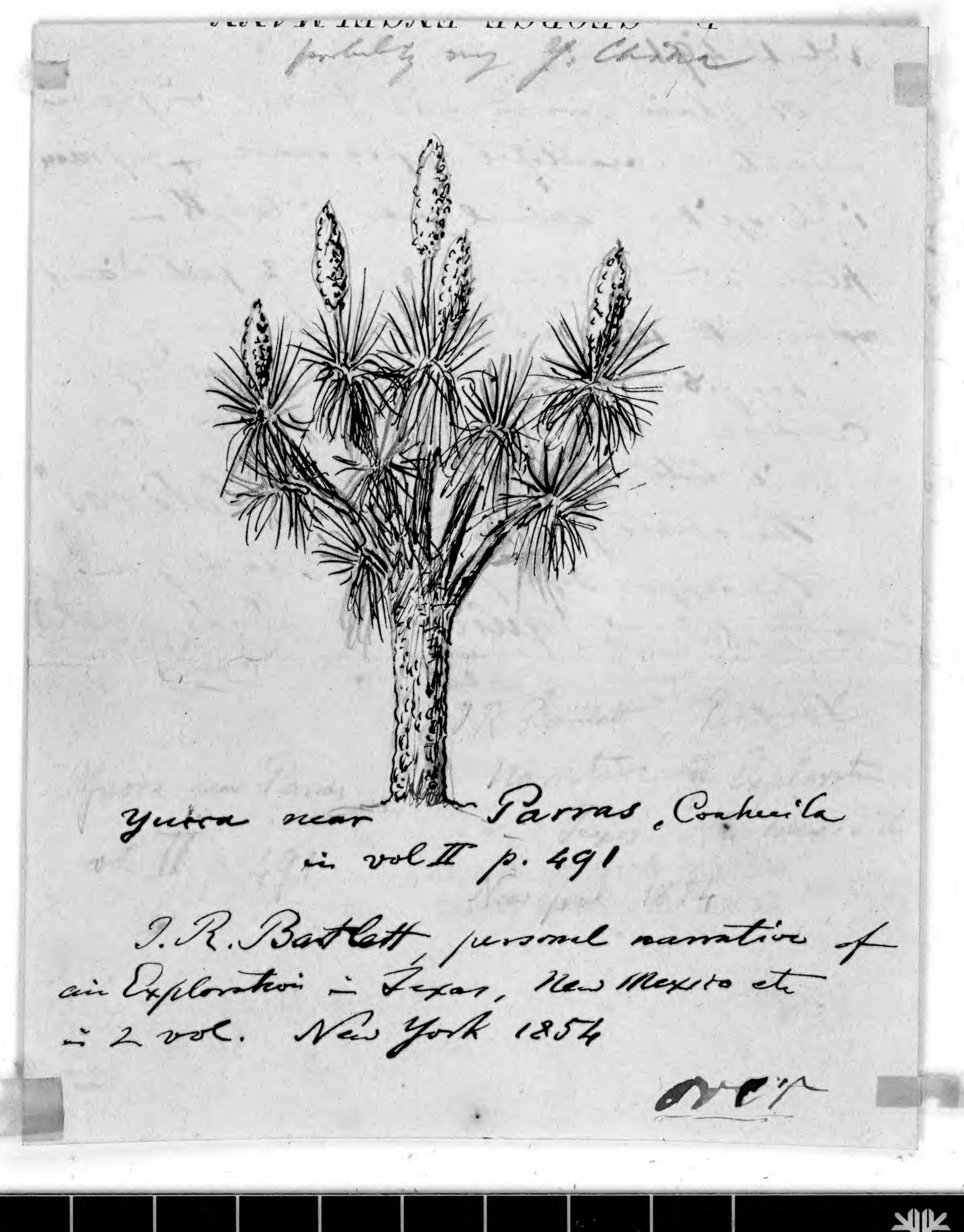
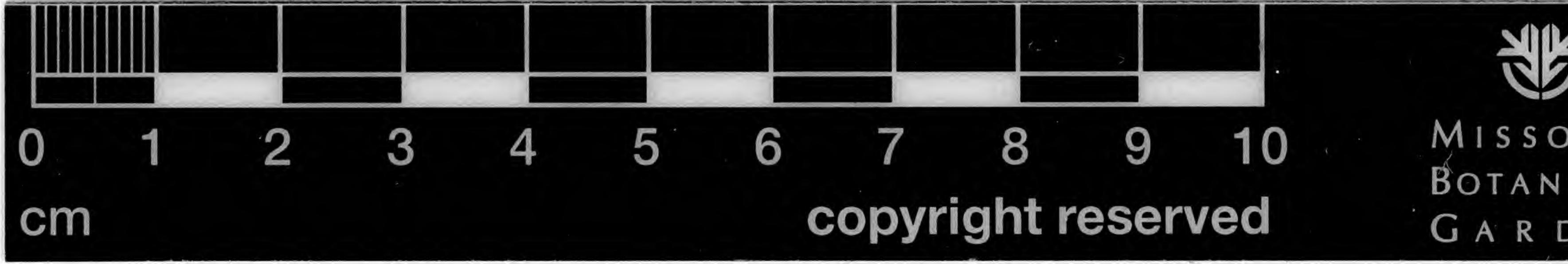


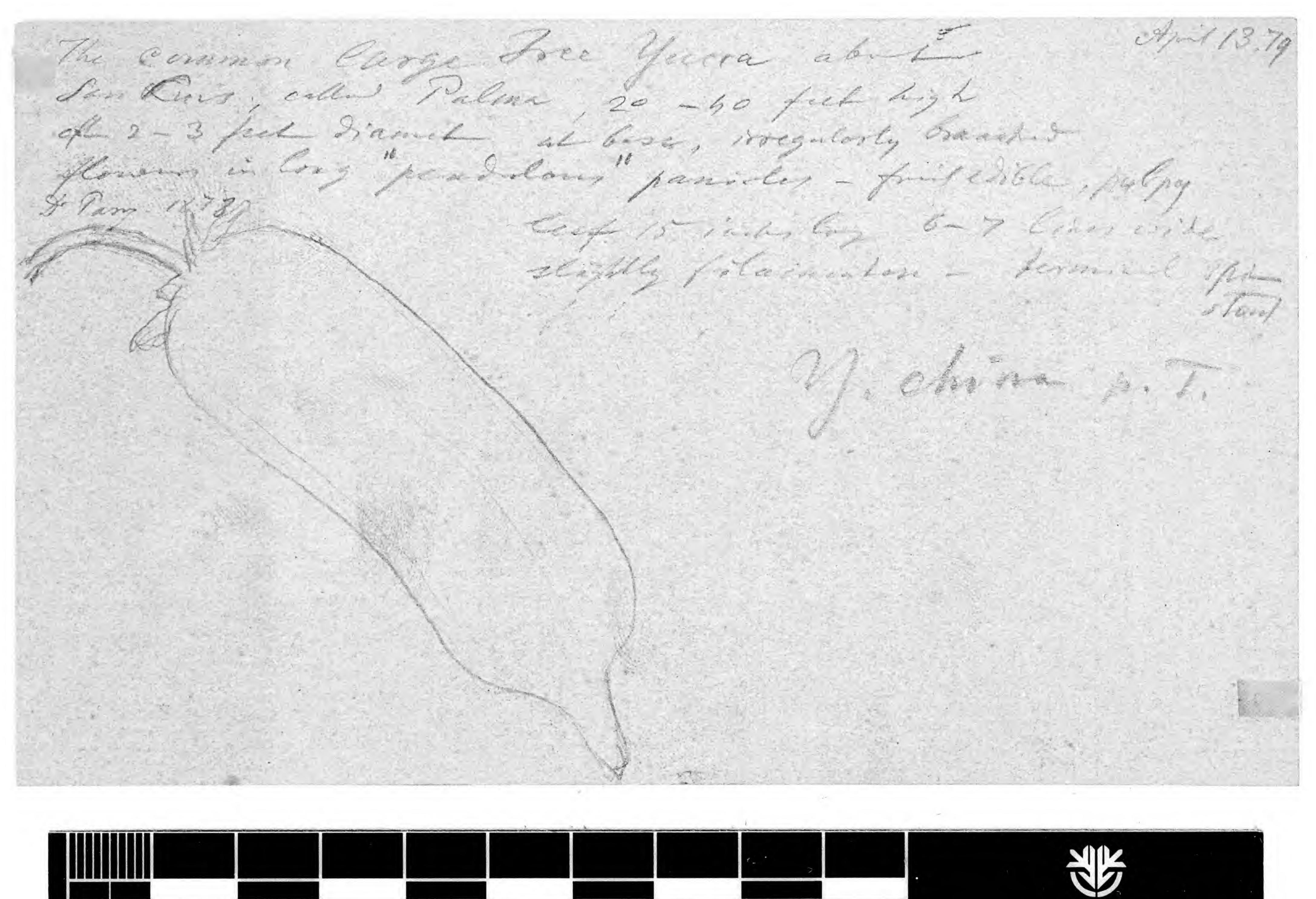
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286 41 491 A places covered with further in flower presents a beautiful appearance of pyram idel spike, sevenl fach en leight plants 25-30 feet high, 2-3 feet dans after with won a degen branches -The form of the leaves are used for Cordine - The trucks as palings on splik ents dabs The colobe fruit is celled, latinos The appen soft part (heart) of the steen is "quiote" and is vousted The flowers cooker MISSOURI BOTANICAL GARDEN GEORGE ENGELMANN PAPERS

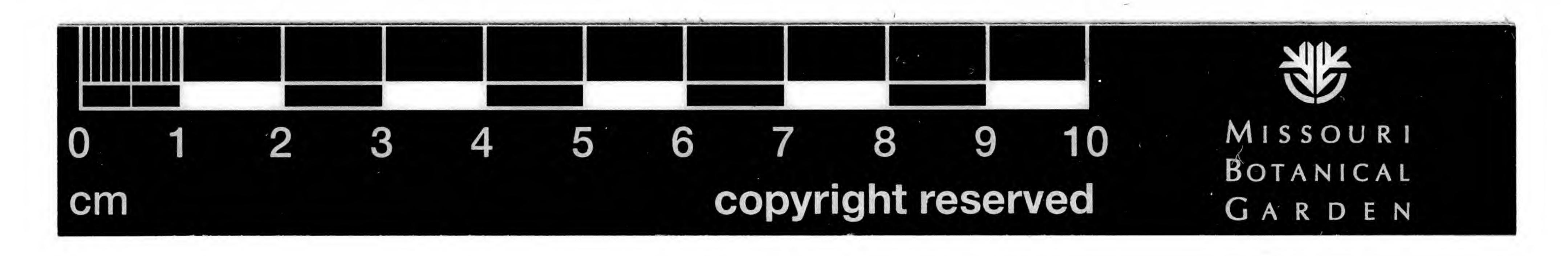
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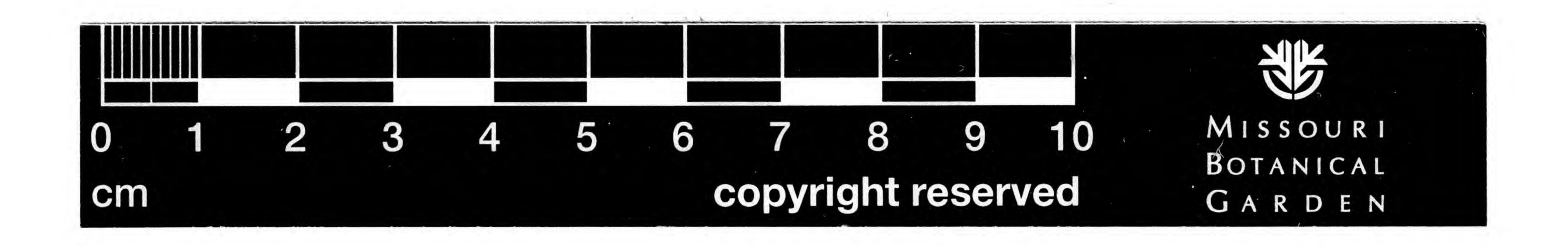


----- ST. LOUIS, MO.





Jurea China a much branched tree, 2 6 feet Nameter orf long, sound 3/4 where wide, with very slender fibres, and a fermint spine about flat on the upper surface. Panile fl. ifibre Manh) evert, with numer, white that inch long; printing pawrite, nodding, fruit barrate pointed, or slightly rottente in head their album L'ommon at San deis Ostori 20 40, monty 30 feet high north want by y Concrata, fruit aller Datile A. end of



scales in 13 order the Sand 8 spirals most from conspiruous; larger states 2 inches long and 7 lines wide stinen lye ELMANN PAPERS

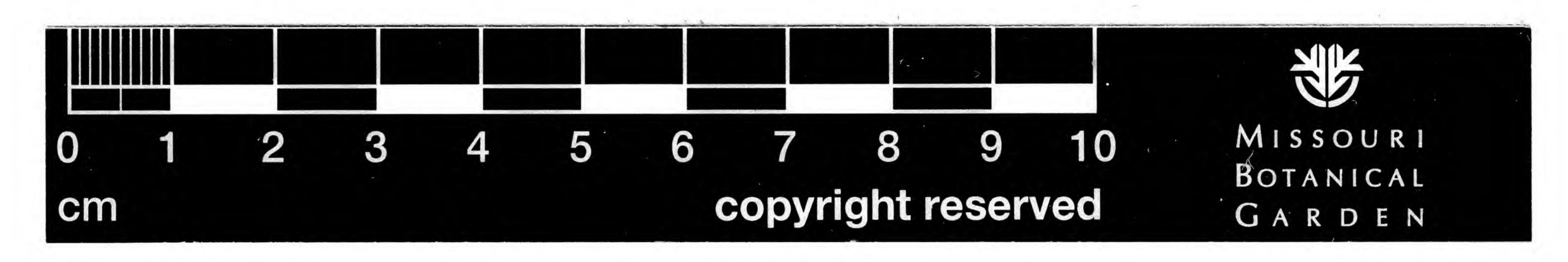
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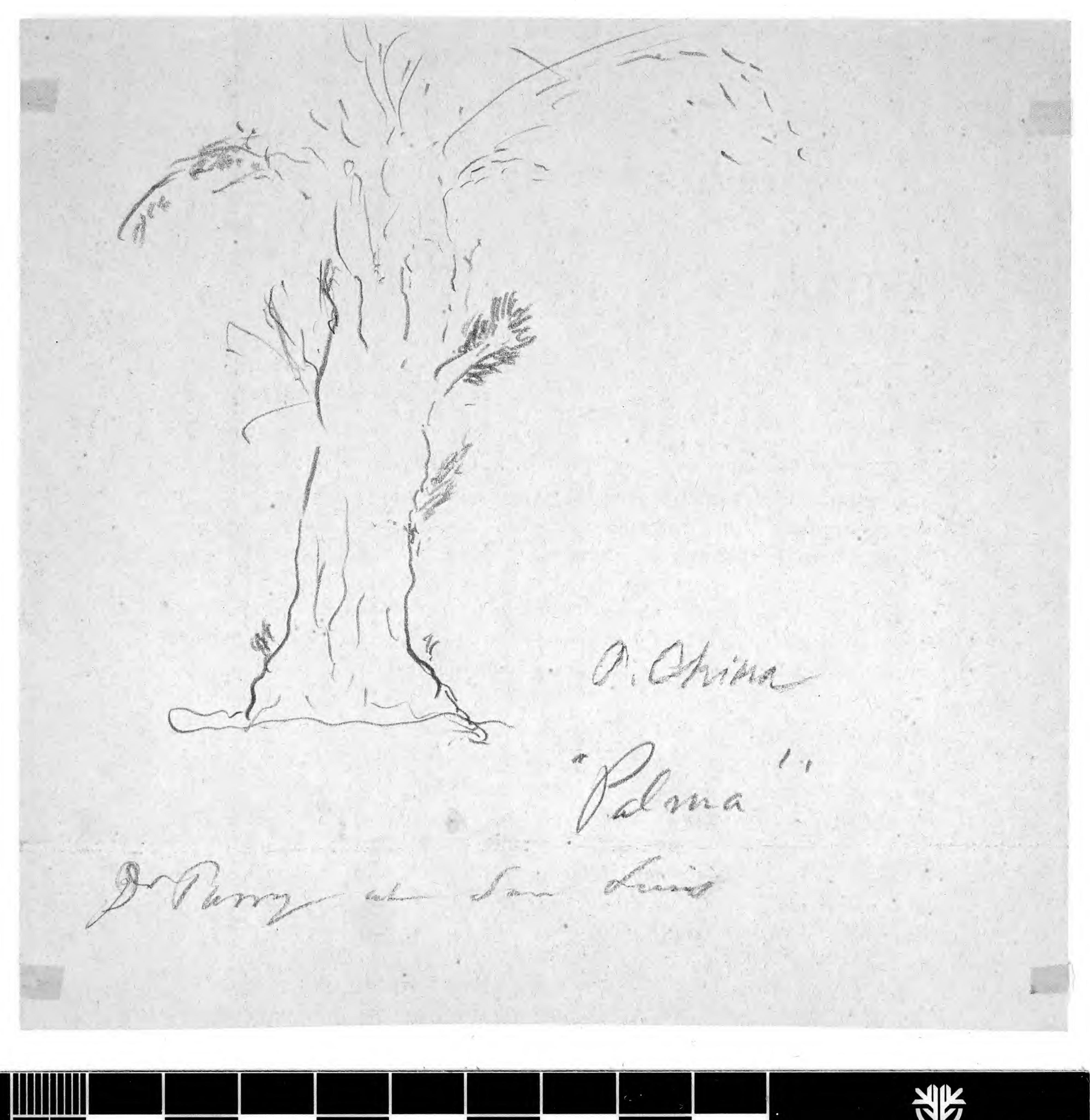
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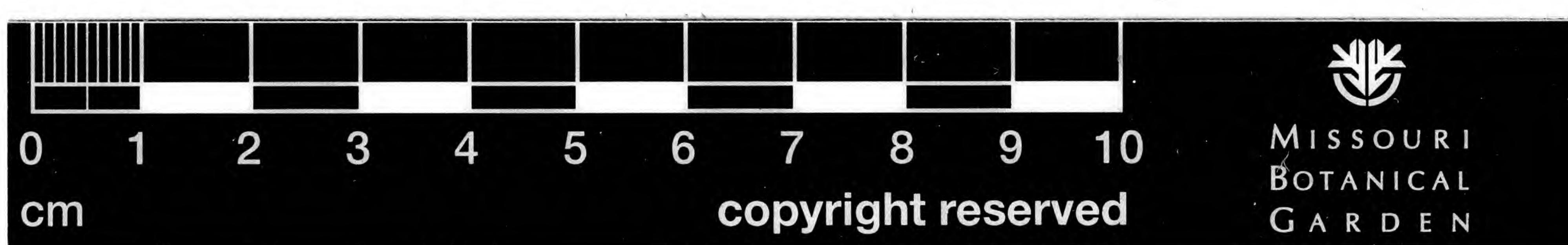
A large free, 70-100 feet high magely to 110

A large free, 70-130 feet high, 2-4 feet in d'ameler,

norigh M'SSJUNI L'UTFNICAL GARDEN GEORGE ENGELMANN PAPERS with their (7-14-lines thick) lawin aled, grayish brown back o Leaves in twos and threes, in the axils of laureolate, long pringed, somewhat persistent bracks, 7 to 12, mostly about 9, inches long, 3/4 to nearly I live wide, and rigid, closely semulate arutish, sheaths at first about of inch long, later withing to one half that length, resinducts internal sadjacent to the sheath of the vase ular bundles), thate flowers from the axilo of Ismilar pensistent bruits oglindrical elongate d'ht to 2 inches long) in a chost head (not more than I inch long), each surrounded by an involunce Alines in length, of about 12 boucts, The extenior pair strongly Reclet half the length of the inner ones, anthons with Jein's cercular d'enticulate, rose-pupile crests; pollen grains 0.03/ to 0.045 lines, on an average 0.04 lines in the longest d'ameter, semale ament, pedan ded, mostly 264, or many







W., Französische-Str. 38-89.

sun uəlyətdmə pun

Berlin, im December 1879.

asllv im resignation in ten in the resignation in the metallic and as a series allen 1. Januar 1880 an die Ankündigung ihrer Verlagsartikel in Katalogen, mov sie wollen aber hierdurch noch ausdrücklich erklären, dass sie vom Edhande esintanet ne na belese derselbe authorit derselbe authorit de mante me mangel et elangle et state standuament man name, annamehmna A name suateres way way may may fo

robo nogistan Aritan Weise die osio men anno die ni nosiora notatos que referencia tedise mhi nou neb elv nerband uz tenuquez nenedegepepus meb hen ganglikel auflieben wird, welche seinen Verlag trotz dieser Erklärung -un uəbunlpuvH uəllv tim — ıvvq uəbəb siv bunuyəəH ui lyomos gandandred, dass Jeder der Unterzeichneten die Geschäftsverbindung -uz rowz ban , nebrew merhingen merhing nebraher stoden, uz nemis

":uətəiqsnp

Wir ditten Sie, uns kerner durch Ihr Wohlwollen zu unterstützen

geehrten Kunden den gewohnten, dis zur äussersten

dass wir, wie disher, so auch in Zukunft Jedem unserer

Diese Massregel soll uns zwingen, die fernere Ausgabe von Kata-

Möglichkeit gesteigerten Rabatt gewähren werden.

Der hierin liegenden empfindlichen Schädigung unseres Geschäftsbetriebes

logen, welche mit unseren Nettopreisen versehen sind, zu unterlassen.

werden wir zu degegnen wissen, erklären ader schon jetzt

"TOTTOM

IOA TOM

GEORGE ENGELMANN PAPERS

Hochachtungsvoll

SSTURI BOTANICAL GAR -- N'

OFFICE OF

MISSOURI STATE MUTUAL Tive and Marine Indurance Co.

OF ST. LOUIS,

ROOMS 126 AND 128, CHAMBER OF COMMERCE BUILDING,

St. Louis From 2/d 1881



Musica Jelifera Rev. Hostric Ort 1 1886 H. afrilig sper.

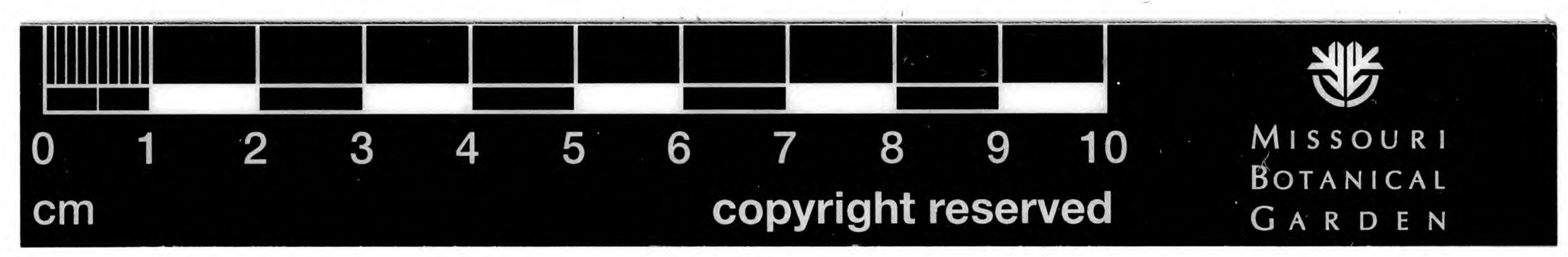
M'er TOTANICAL GARDEN GE-RGE ENGELMANN PAPERS



Juour filifere vourse fibres, name leaves Mund file the fundament of file withers Jucan canalicaleta Trunk 2/2- I the high, 10-12 out
Jucan canalicaleta Trunk 2/2- I the high long pointed

Quameter (in survalue hour) leaves stiff long pointed


with fee long fibrous f same as in Player al sum of pio neples! / another speria - with that name has und let brown leaves, a dis slylly fibrous only - wishly) Smithty very Different -



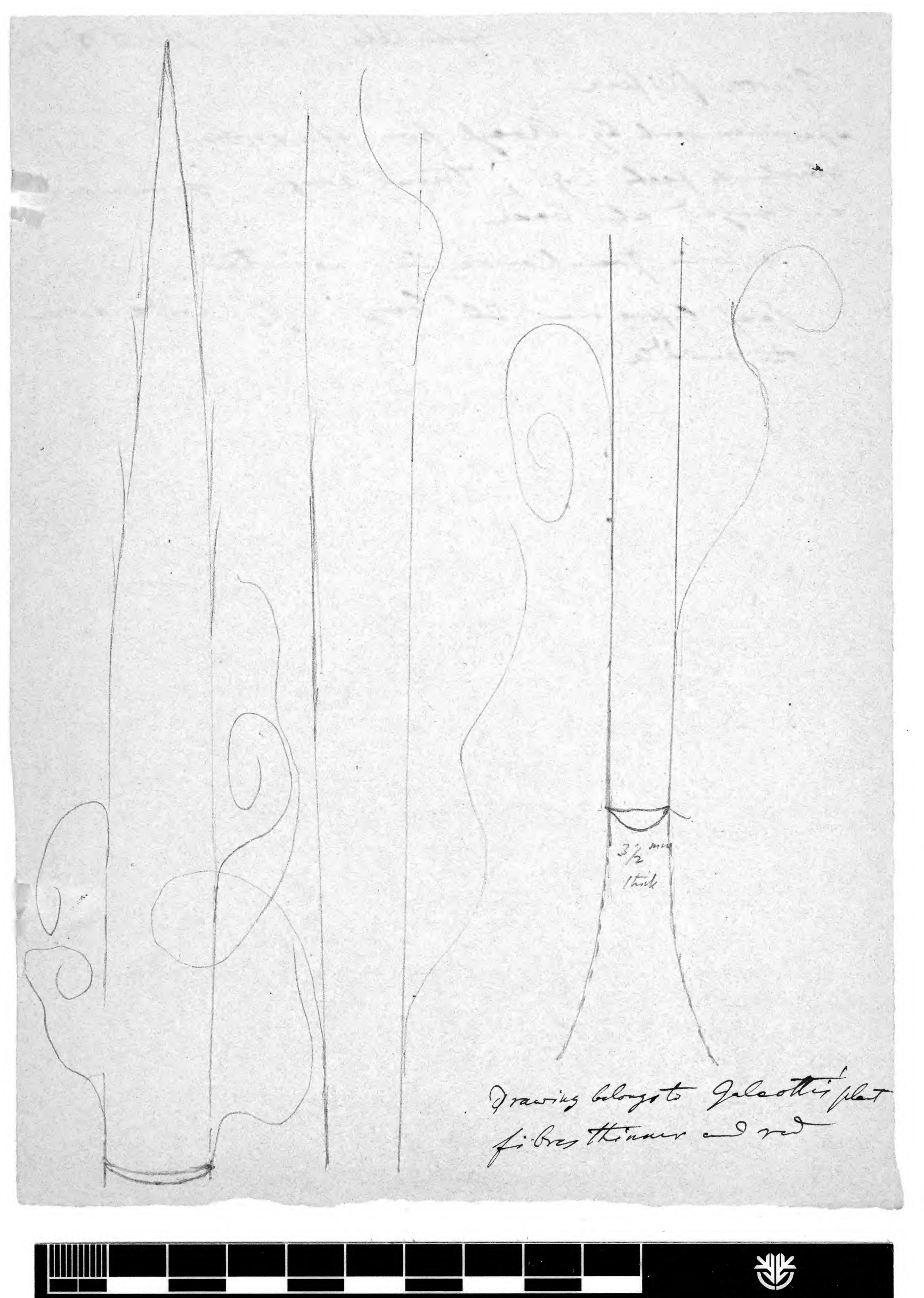


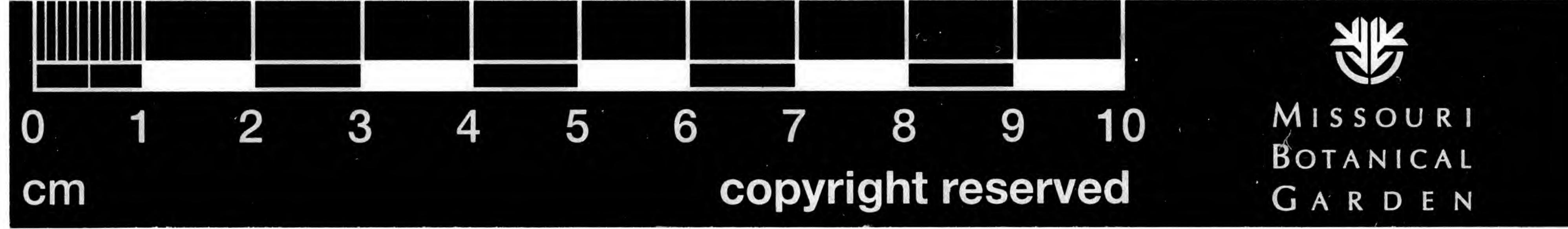
Host Thurst, Antibes 25 Febr 1869 Jura filifera The same elegant plant I had seen in the Pringer. The Incoming the Pringer of the Capital grows (Am Cell) at Rome. May not get flowered. Four feet high, trank naket below, very leafy above deaver remarkably slift, 18-24 inches long 1-1/2 inch wide omnen above, convex below, aprovants 3, lealow, at the theithest part, whore than 5 min thich. for I for 1/2 - 1 inch Cong whitich or rather ash, wilt Bown marying between this is the green part, tirete spinong pout 6-7. mon long very stiff. Leaves green both sides, with few their flexuous as pendon, long fibres on margin, Lowest par part of leaf not much namows nor base mecch cor'dened, bet narrowert part flat above, not concarre, or even some Nat con vex str -6 min Thich.

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Host Cels, Paris, March 18 1869

Murra filifera

Sperimen sent by Avegl from Maxitor

about 4 feet high: trunk single, somewhat

cularged at lose

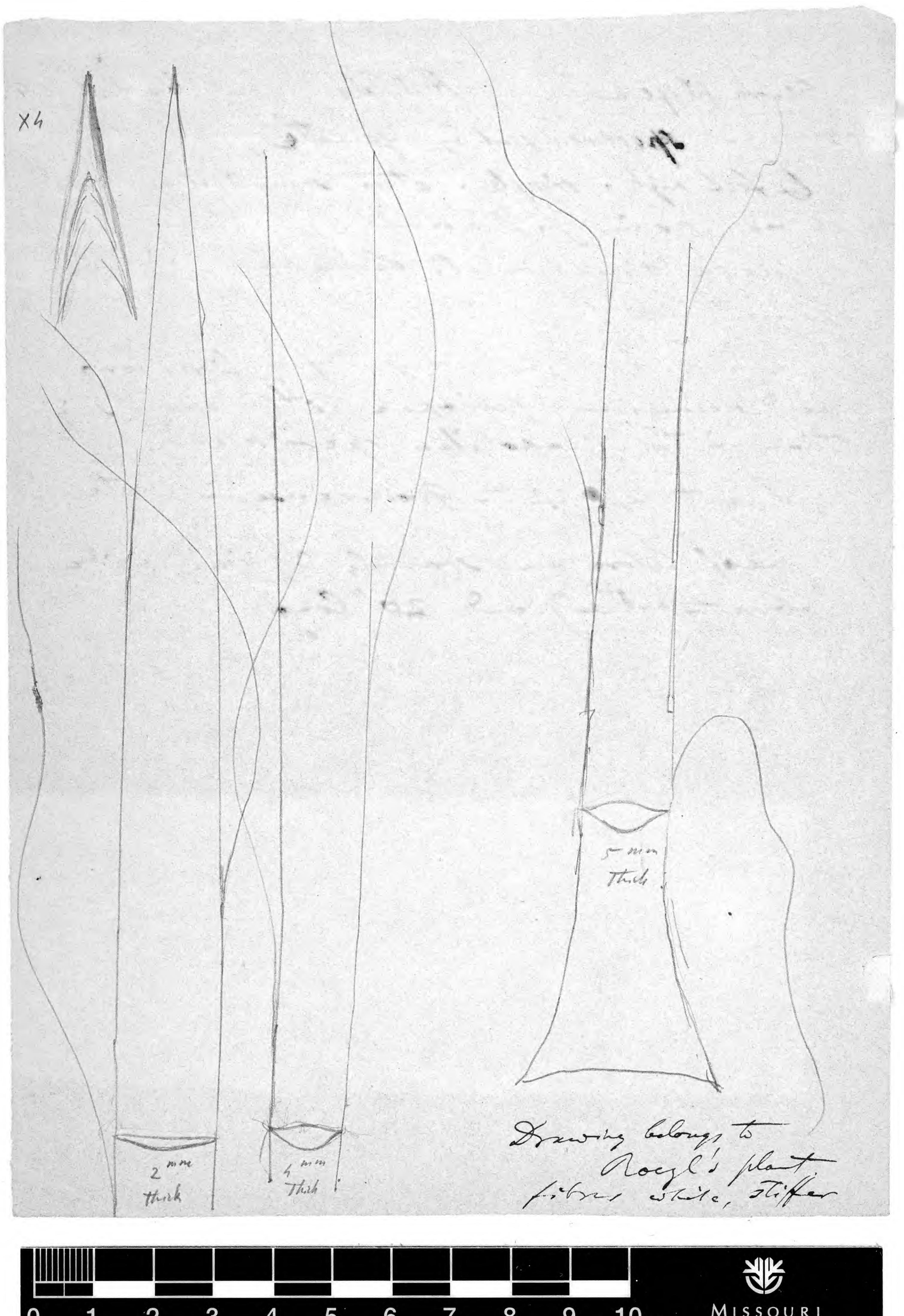
Kept in Grandonse in winter

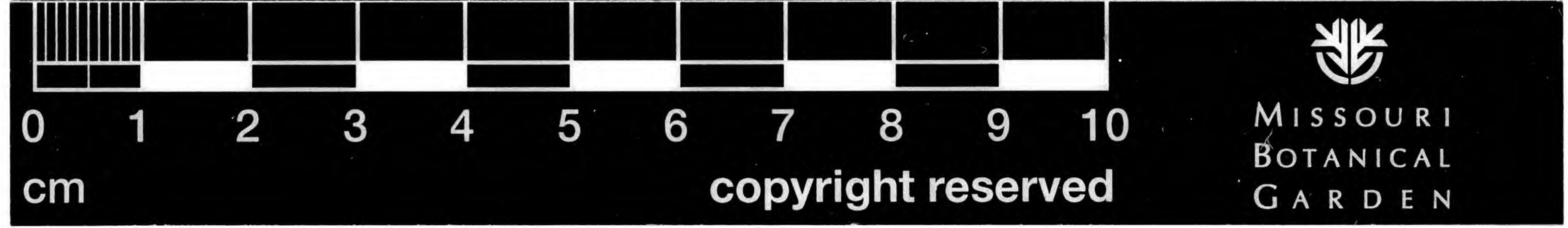
Leif leprene 20" long 34" wide above

the midte









years plifem Host Cels, Paris March 18 1869 original specimen send by galesto, before high, timple, steen somewhot ealarged of base, as in y. Diarraing.

yee on canalisate Lemaine, is the same thing.

Leaves na now, very stiff fibres long and necommons, perhaps a little moon stiff than in the Acapolitan sperimeny.

Mant kept in the green house in wroter above the mode of before me sommely 3/4 inch with above the mode) and 20" Cong

MISSOURI BOTANICAL GARDEN GEORGE ENGELMANN PAPERS

85 40

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Musica cambillati." in Hort Juedeney
has a trunk, 6 inches high. leaves very nama
(5-6" with) stiff very filamentore, and resence;
much years augustifflie





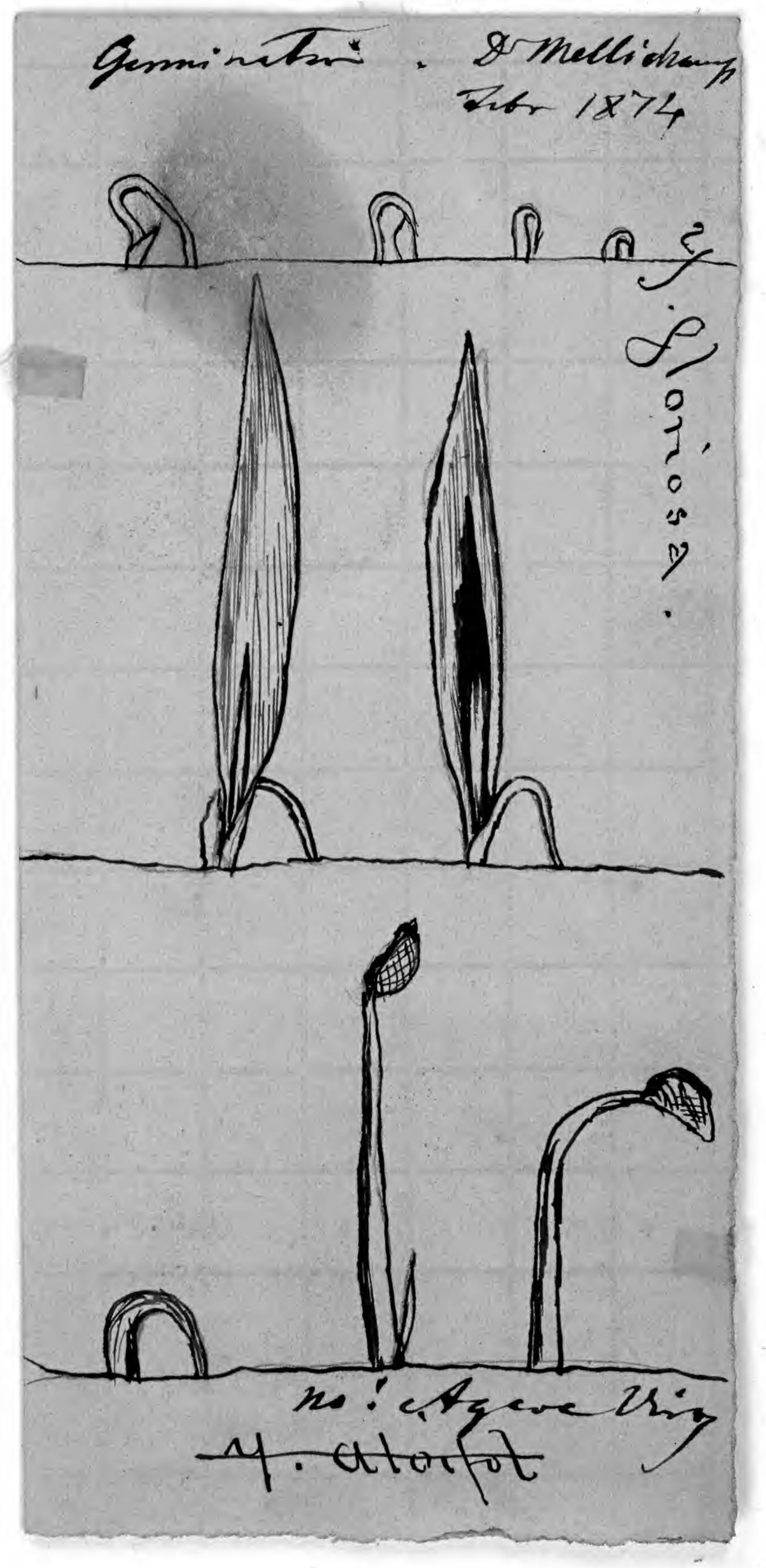
Yurra canalitalet in Hos. Neapol. Jan 7 1869. a smile sperie en a pot - but air the Stayer del Municipies (opposite Nog Tottonia alla Ulla d'Firenze) a fike sperimen groved in open ground, Cambernet, 3 feel high, helit of y aloefoles, with stiff spirose leaves in margin few stiff and long fibres_ so that I at first thought of my Yuma manifila (Maleaty Tom) but the fibres are mon steading not desited and dang like long pierry It may still be the Jame Thing.



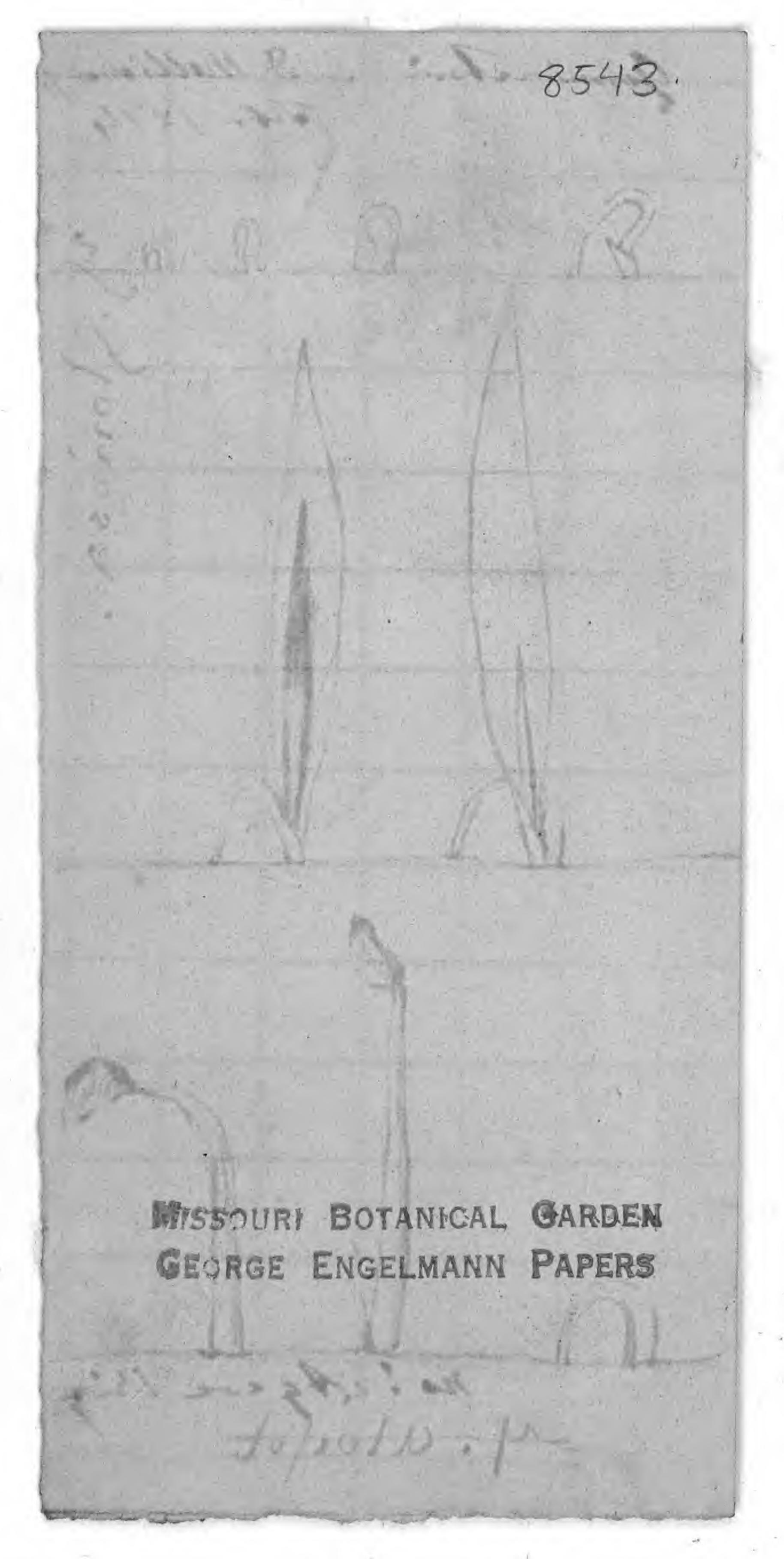


MISSOURI BOTANICAL GARDEN GEORGE ENGELMANN PAPERS



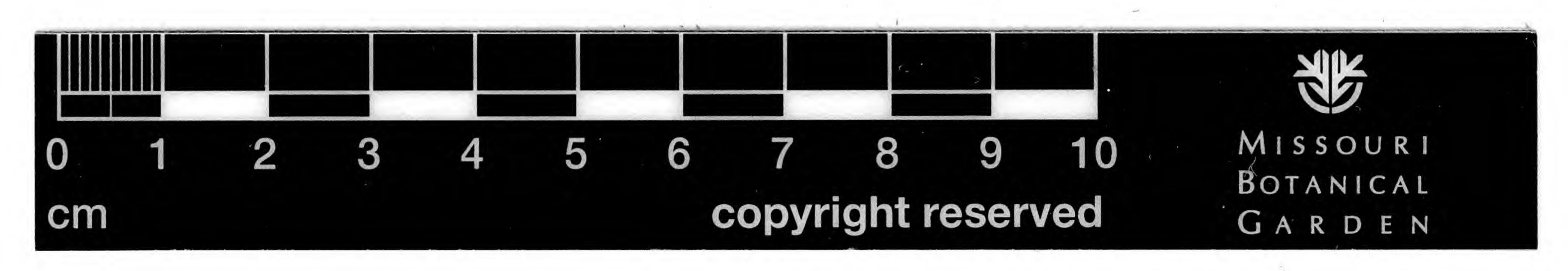








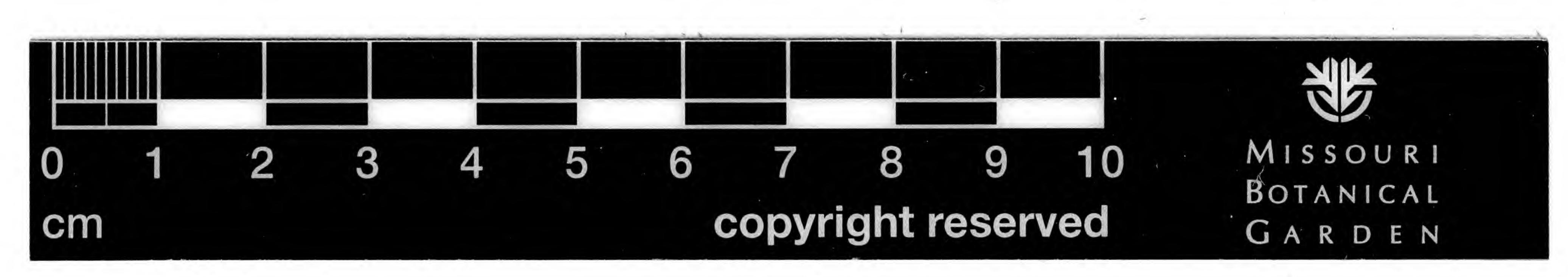
Ir Engelmann says That out our recession he managed to get a destruct view of The tube of the pollen of a Jucea actually proving down into the ovules, He neplected to save the spine but much a seetch. He never sand this buil once of Then only by accident. nor2/17







To view the follow tukes of again Shawii Englis Have the drop of Stegmatic fluid upon the microscope slide & dilute it with Water. - D'Engelmanne Tixil 200 2/2

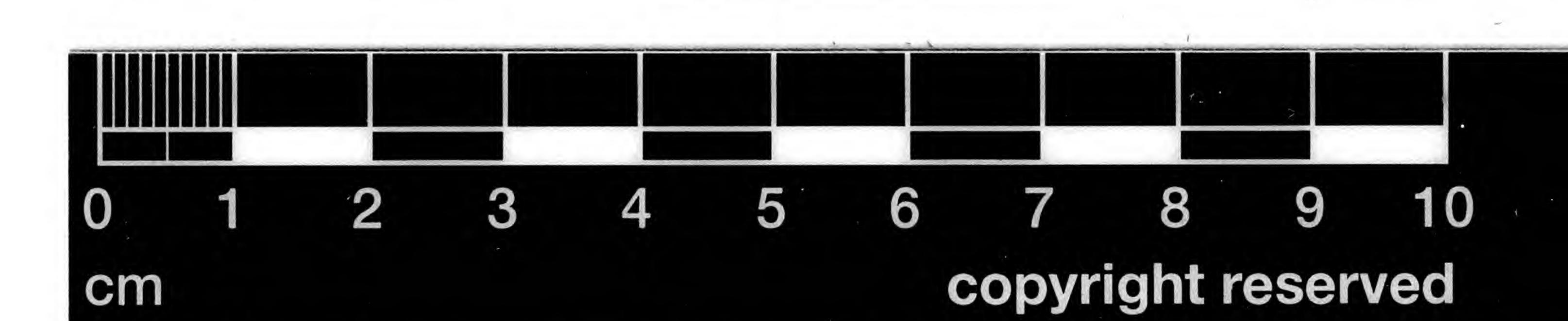






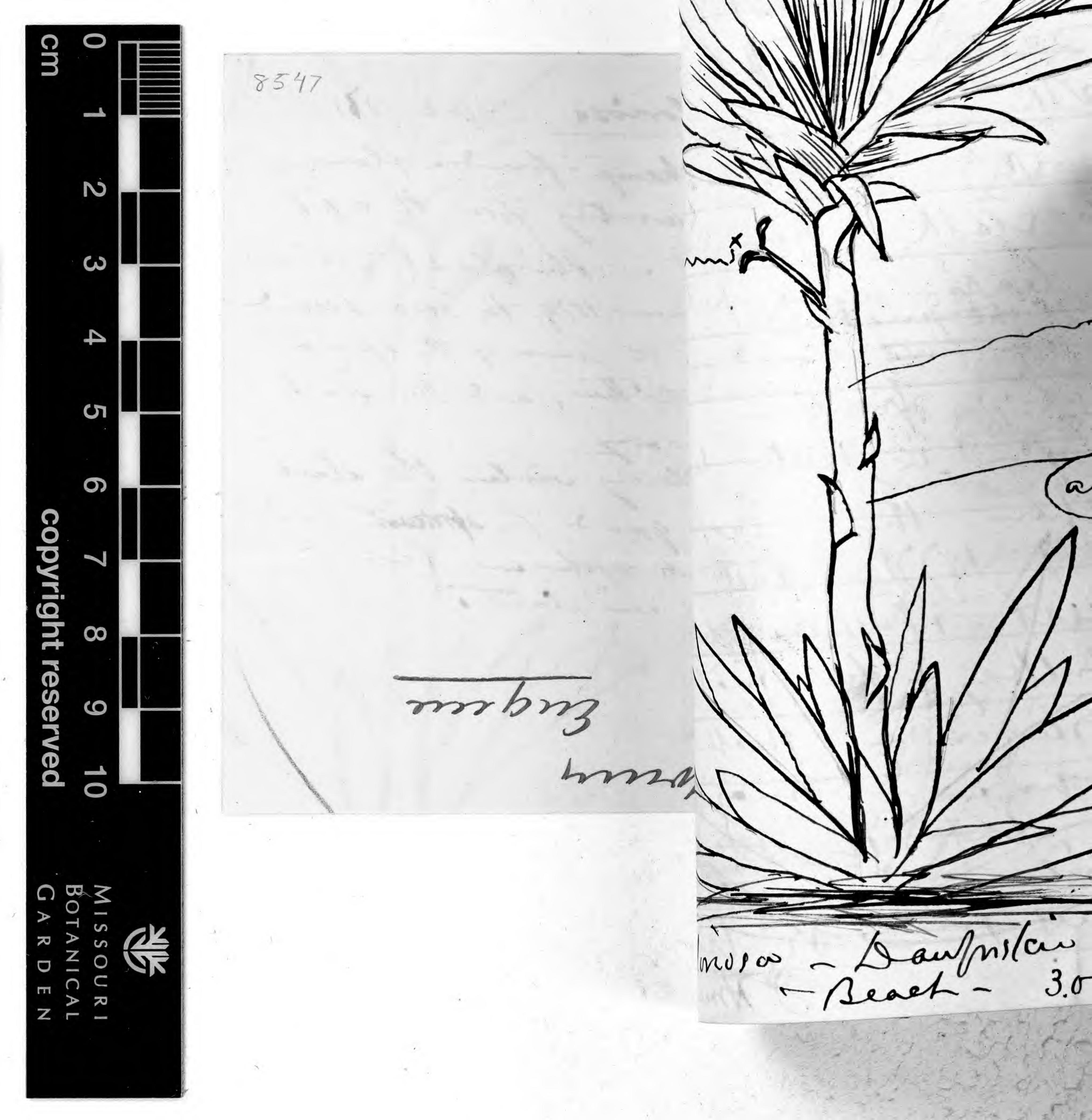
The ca - West from ago. Flowend at Hort. Bot. Heo Oct 9/77 -Il was named grivea when rech. I The overy is of the usual pale green I style the stigmant filomenents of style an & I sure white. The wary is narrow as Jos Compared with J. angustifolia (i.e. the John from from Hort Bol. Mo). The Hanner 3 That nach & the word of The The overy is hardly promatice of has hardly any canaculations. The Howard Smell von sweet. The innea Set of periouth and with the outer I there. I have not seen the foliage. I the plant according & Mothaw 44th. MISSOURI

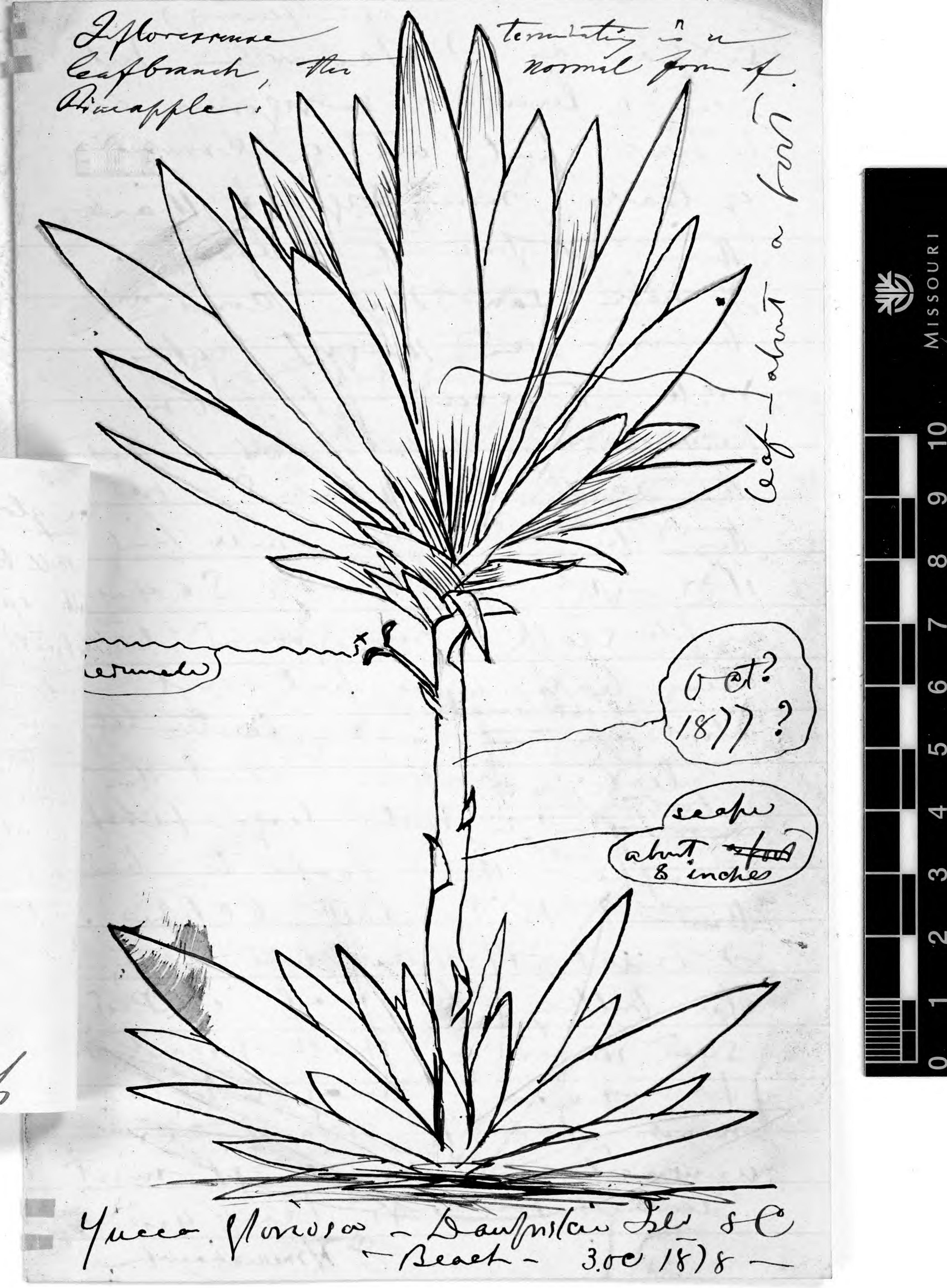
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MISSOURI BOTANICAL

Juca gloriosa och 1888 & mills thangs found a flower stalk sprouting from the and of a fract. He plante the wholestock in Summer 1879 the 212 per deemed to dry and, the leaves of the spront began to the she en thomasing. 2. the following winters the stalk being on the grown, the sprowest had taken fresh voot and verise miking a new plant,





Supar an I Tomm I but freen 1 ling 1 sompones as 1. have fut at a comm of learns mon hours than then of stems. I neva law This cont before, and Thurst it Well to seent it. one hermale mas left to show that The Deaper Las Howard. M the The Jun mull for it must skelder. Seaper a fla stalk fra framed to when lears were put out out about Eight inches, but a levite left, Stoot a litte lenger petals. I suppor this sect to be that of 18)) - last believ. I buyst if him with me. to bulling for mail or Dis sunt il il fuhren. It may not has much, but it certains, is unusual & Thurst of myst interest 7 on 1 Kg truf you I Amuelant

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Race Och 8 the -Bluffin 3.00.18 Lyro Engelmann my En Lovelon fums Tim's pestenday. Duite sent a parel fooles a sum as Less ame la fix them ups, and explanating letter at 71 Jane time. I spent Cait mynt mit Tim Dick at Dans Efullai Isi a am pul book, and as Lawry Down mans sur! Then or Sime they we that line -MISSOURI

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BOTANICAL GARDEN

Latina reput This Dame 1. Had Quarters! Longy. they mining I structed on the beach - or what they Cau a beach- althous it is not much of me). [. luk ut Junes - mt. the Vague him of funding fruit of y. Venora. I saw two in bud, and with slem about 3 feet by andke me stem at all, or normon than y. filamentosa menal has. n. signs gemen of fruit in them. I then texteet For fu lait) sans fling stalks, but at usual ne træs og ang frut on Hew either. 13ut d dut fint a flower stalle of last Jean which mas met Ras like Kon Dest, and an they always and

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MISSOURI BOTANICAL GARDEN

Aug 15 1873 furra Gloridsa Host. bot. Wishington furtifiera A Sohot mis The only leaf seen is sliff, green or soundly perifilly glaverous beneath, sheep posited, brown margin, lighter on the very edge i rough or semilate mejelesty) a fer chicken above base, but teeth musbling off, - Stack of leaf quite sough upon samily In i lover half den 18 italing long 17 likes write below the un'Nte stame it is widest. avove base only 6 liver will Tif bet not very thick . MISSOURI BOTANICAL copyright reserved cm

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Sperimen of Photograph sent to Mullithamp Milas Andery The season of th Andrew Control of the and a second of the letter of the second of The the second of the second o The state of the s Lector of the more and the second MISSURI BOTANICAL GARDEN GEURGE ENGELMANN PAPERS

Dr. Isaac Ott writes to the Medical Record the following upon Coca and its alkaloid Cocain: After a small dinner, with a cup of coffee, I masticated Coca, swallowing leaves and saliva. First, increased salivation; warmth of buccal mucous membrane, which extended to stomach; the taste of leaves at first rather bitterish, but at length sweetish; numbness of buccal mucous membrane; the heat of the skin seemed increased, and the physical forces seemed greater. In thirty-five minutes a slight disposition to move about. In two hours and a half ten grammes eaten, and some intoxication present; co-ordination somewhat impaired; muscular strength seemed weakened; a sort of paresis; disposition to be left alone; going into reverie, with frontal pain; tinnitus aurium; ears feel as if I had been blowing a wind instrument; pupil slightly dilated. In three hours, somnolency; frontal pain and fulness about ears continues; disposition to close eyelids; general numbress of whole body. In three hours and twenty-five minutes 29 cubic centimetres of water taken; mouth is hot and dry; nervous urine passed. In three hours and forty-five minutes, general numbness; reveries; holding of respiration, as in deep thought. In four hours I have taken 19½ grammes of Coca; the remaining were chewed, and the saliva only swallowed; somnolency disappeared; mind bright and clear. In five hours, I have taken 28 grammes; pupil more dilated; slight supper taken, no coffee, but water; the supper seemed to bring down the action of the Coca. In seven hours and forty minutes, the Coca being gradually chewed, frontal headache returns with fulness of ears. In eight hours and forty-five minutes, 60 grammes of Coca have been chewed; loquacity; eyes brilliant and moist; at length speech becomes thick; am in high spirits and full of hopes. In ten hours and fifteen minutes frontal headache again coming on; drowsiness; then retire, but am unable to sleep. After a few hours, deep sleep comes on, but is disturbed and not prolonged. Arise at 7.30 A. M.; pale face; eyes seem dry; lips bluish; take a light breakfeast without coffee. Since 10.30 P. M. last night have had frontal pain; sensation in mouth still blunted. At dinner took three cups of coffee, which relieved me, but headache came on during the afternoon; taste blunted during the whole day.

Coca on man increases the pulse, elevates the temperature, dilates the pupil, and de-

creases the amount of water used and chloride of sodium excreted by the kidneys.

Observations made with Cocain on lower animals gave the following results:

In small and large doses it causes loss of co-ordination and decrease of motor power; it does not paralyze the anterior columns of the spinal cord.

In small doses it increases the sensibility, which causes general convulsions upon irritation. Large doses abolish the functions of the posterior columns and sensory nerves.

When gradually introduced in the system, it kills by stoppage of respiration. It reduces the pulse and arterial tension momentarily and afterwards increases them. This effect is a result of an action on the heart and vaso-motor centre. It does not paralyze either the pneumogastrics or the vaso-motor centre situated in the brain.

It first excites and then paralyzes the centres of respiration.

The pupil is dilated, and the temperature after a depression rises.

On striated muscles the course of contraction, as registered by Marey's comparative myo-

graph, is similar to that with veratria.

If Coca and Cocain are compared with coffee and caffein in their physiological action, the result will be that they are very similar, and that Coca and its alkaloid should be classed amongst the excitants, of which coffee is the chief example.

From a pamphlet on Coca Leaf, by Manuel A. Fuentes, of Lima, Peru, and translated for the Chemist and Druggist, by P. L. Simmonds, we make the following selections:

The leaves are gathered when they have attained their full development, which is about 4 centimetres in length. They have then acquired a certain degree of consistency, the green color—resembling the emerald—of the upper surface and the pale under side of the leaf are in their full brilliancy. About this time they will almost drop themselves. During the gathering great care must be taken not to injure the young leaf-buds, or they will dry up, and the second crop of leaves be diminished. They ought to be gathered leaf by leaf, holding the bough with the fingers of the left hand, and collecting with those of the right hand.

In taking his Coca the Indian seats himself leisurely, and opening his bag, introduces leaf by leaf into his mouth. He chews it, and with his tongue forms it into a kind of ball, which he lodges in the side of his mouth, like a quid of tobacco. He then moistens with his saliva the end of a small stick, which he introduces into a little calabash containing lime or wood ashes, formed of the burnt stems of the *Chenopodium Quinoa*, and licks this stick two or three times. They generally take Coca three times during the day; the first time before commencing their work, the second about the middle of their task, and the third some time after completing their labor.

For a long time the reputed virtues of the leaf were scouted as fabulous, but later, the results of experience, the impartiality of the celebrated historians, and the authority of a great number of scientific men corroborated the facts set forth as to the benefit of this

custom of the Indians.

case. The price of coca at La Paz, where the best is procured, was last year sixteen dollars per acket of twenty-five pounds.—Popular Science Review.

M. Colpaert, in a paper on the subject (Bull. Soc. de Accl.), says that often when passing the grand chain of the Andes he has chewed coca to combat the cold, and always with the best effect. The leaves have a bitter taste, but do not burn the tongue, as is alleged. Those who use it continually, and with "llipta," have an insupportable smeil. The first time he tasted it he felt, after a few minutes, slight shiverings of fever; the blood mounted to his head and pressed forcibly on the temples. He felt this for about ten minutes, after which a complete reaction took place, and he experienced from head to foot a pleasant and agreeable heat. Arrived in the morning at his resting-place, he took coca in the shape of tea before going to sleep, only throwing away the first steeping and drinking the second water of infusion. Notwithstanding the snow and the intensity of the cold, he experienced a pleasant heat, perspiring so freely as to wet the mattress.

The Indians attribute to coca many virtues, and employ it in different forms. It is for them an indispensable and favorite sustenance, for the deprivation of every other substance is less

felt than that of his favorite coca.

Every traveller passing through the country should lay in a stock, for it is the best medium of currency, and that most appreciated among the Indians. Often in the mountains not a thing could be obtained with dollars or coin of any kind, but a handful of coca will act on the Indians like a talisman, and for it he will place his hut and all it contains at your disposal. They also use coca leaves for every external malady, whether it be a cut in the hand, to stop hemorrhage, to heal ulcers and boils, or for neuralgia and headache. In the latter case, a moistened piece of coca is applied to each temple, and whether it be superstition or reality, an immediate relief is said to be obtained. The following narration of the virtues attributed to coca by the Indians was told M. Colpaert by actual witnesses of the proceedings:

In one of his latter journeys to Vilcabamba, one of the richest mineral districts of Peru, he arrived in the town at the moment when they were carrying out of his home one of the miners who for many years had been afflicted with a dreadful malady, which defied all the efforts of medical skill to cure. His body was covered with external ulcers, and the unfortunate had been given over as incurable, and suffering martyrdom, implored to be put to death. An old Indian, who had formerly worked under his orders, demanded permission to untertake his cure, which was granted. The patient was laid on the floor of the room, stripped, and half a dozen Indians commenced chewing coca and llipta, singing and dancing around him with strong cabalistic actions. After about a quarter of an hour, when the leaves had been sufficiently masticated and impregnated with saliva, induced by the abundant foam, they again commenced dancing around and spitting on the body of the unfortunate. This lasted for about half an hour, when each Indian placed his quid of chewed coca on the ulcers of the patient, who was then enveloped in cloths and left to repose. The same scene was renewed every two days, and at the end of the month the patient, who was named Gonzales, was thoroughly cured. This treatment took place in 1850, and he was living eleven years after, when M. Colpaert wrote his narrative.

From experiments, made repeatedly on himself, and on other individuals, Dr. Mantegazza draws the following conclusions:

1. The leaves of the coca, chewed or taken in a weak infusion, have a stimulating effect upon the nerves of the stomach, and thereby facilitate digestion very much. 2. In a large dose coca increases the animal heat and augments the frequency of the pulse, and consequently of respiration. 3. In a medium dose, three to four drachms, it excites the nervous system in such a manner, that the movements of the muscles are made with greater ease—then it produces a calming effect. 4. Used in a large dose it causes delirium, halluciations, and finally concestion

of the brain.

The most prominent property of coca, which is hardly to be found in any other remedy. consists in the exalting effect it produces, calling out the power of the organism without leaving afterwards any sign of debility. The coca is in this respect one of the most powerful nervines and analeptics. These experiments, as well as the circumstance that the natives have used the coca, from the earliest period as a remedy in dyspepsia, flatulency and colic, have induced Dr. Mantegazza, and several of his colleagues in South America and Europe, to employ the leaves of the coca in a variety of cases, partly as masticatory, partly in powder, as infusion, as alcoholicoaqueous extract in the dose of ten to fifteen grains in pills, and as a clyster. Dr. Mantegazza has used coca with most excellent results in dyspepsia, gastralgia, and entralgia; he employed it not less frequently in cases great of debility following typhus fever, scurvy, anæmic conditions. etc., and in hysteria and hypochondriasis, even if the latter had increased to weariness of life. The coca might also be employed with great benefit in mental diseases where some physicians prescribe opium. Of its sedative effect in spinal irritation, idiopathic convulsions, nervous erethism, the author has fully convinced himself. He proposes its use in the highest dose in cases of hydrophobia and tetanus. It is a popular opinion that coca is a reliable aphrodisiac; the author has, however, observed only two cases in which a decided influence upon the sexual system was perceived.

Dr. Mantegazza, finally, recommends this remarkable plant, which could be easily introduced into trade, to the profession for further physiological and therapeutical experiments, and adds the full history of eighteen cases by which the medicinal virtues of the remedy are proved to satisfaction.—London Pharm. Journal, from Oesterreichische Zeitschrift für praktische Heil-

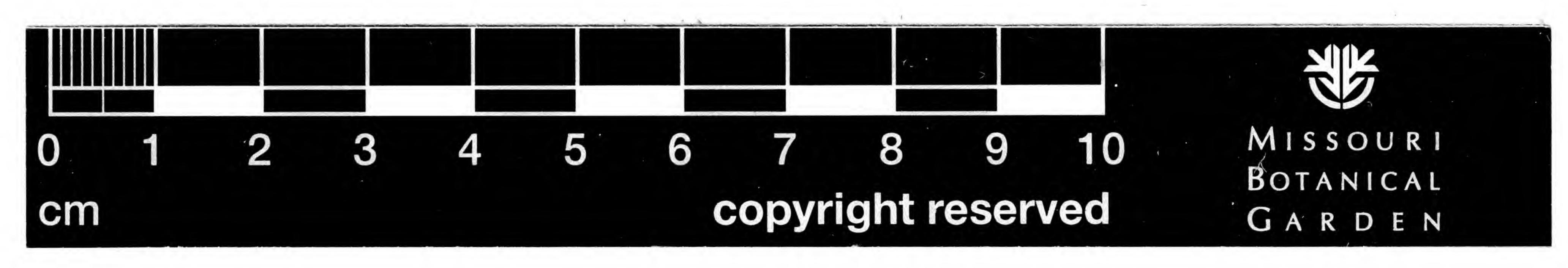
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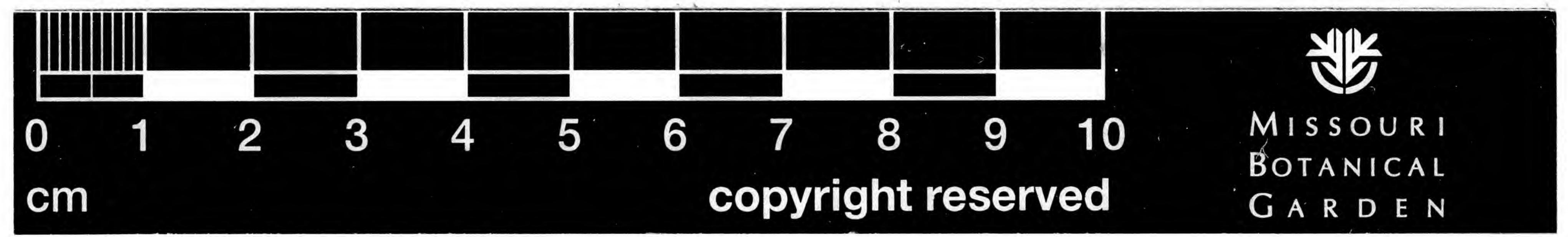
GEORGE ENGELMAINN FAFERS

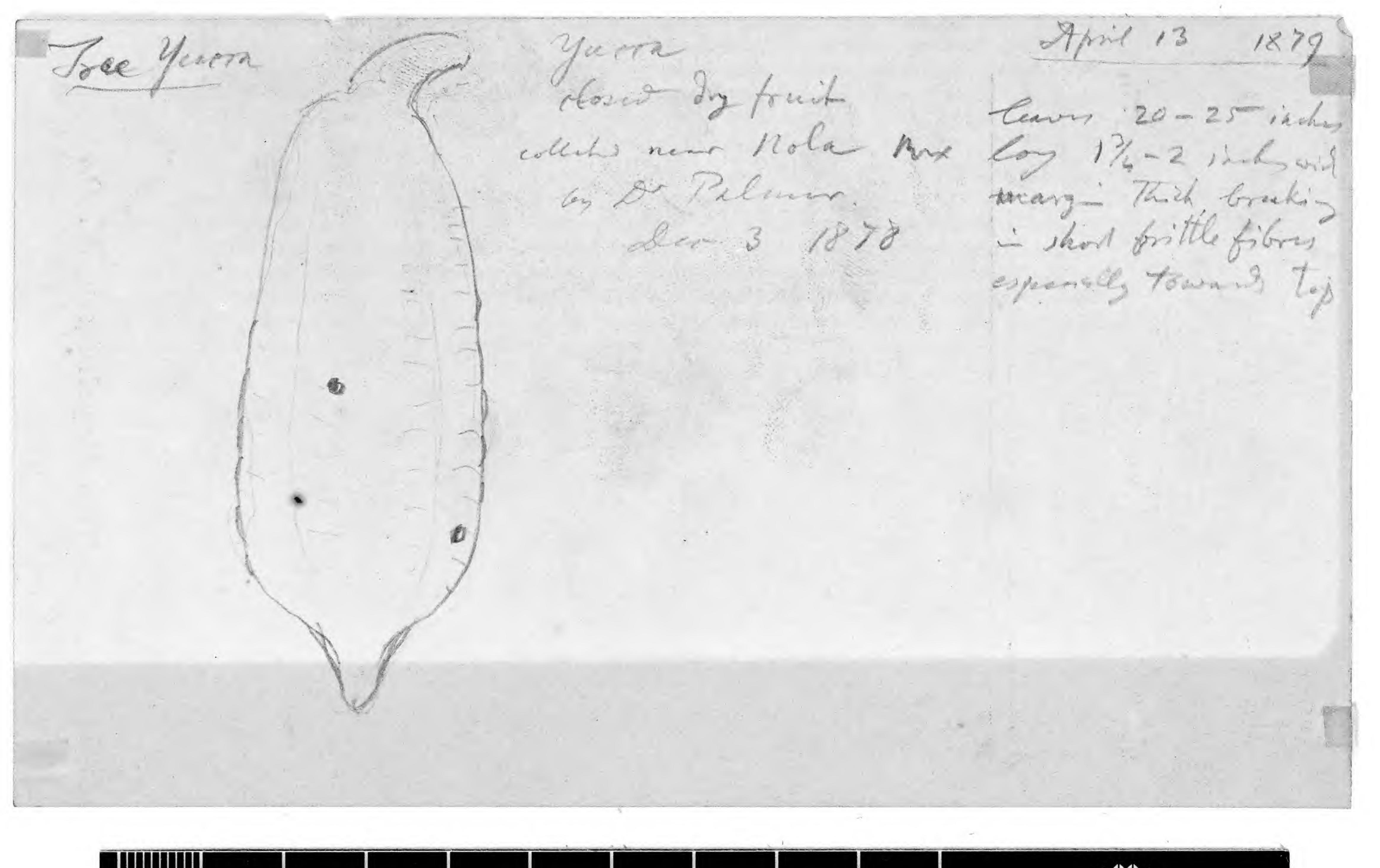


developed a recurred position, the axis meanwhile elongating and in vigorous Trees not ravely forming a second hier of aments sevent inches above the first ones, beaf bundles. The bruits Contents bear the usual leaf bundles so that no naked theftest, only brust bearing That is observed boothe amonty such as we find so often in pines bearing belong tones ft. 9. Dings P. pungers, P. rigion and many others, Carpellary scales brond rounded more or less abruptly outpildate, their bracks half their leagth, transverse, retuse. Comes pedurled, occurred, oval to opliadiral - conscal, 3tob p, usually 4 to I inches long, 1/4 to 2/4 inches in d'ameter (when closed) of a rich brown odown and almost glossy; sales larger 2 inches line and I lives wide Stracts thickened return or cominginate papetyses marked with grownes, radiating from the slightly prominent umbo, transversely divided by a sharp nige armed with a short stout prickle. Jeeds triangular 2/2 to 3/2 lines long, Dark rand rough on the under side, wing



mank 1880 Jura Loca Trub deaden, simple on rarely with a few short branches in the top. Leaves large as pairile enest, also in fruiting; fruit pully seed that In San Levis Poter, naver the Cast, seed at the Cast The wide, with few but very that, center fibrey outher edges at artt a deeply channeled Ferminal spine. Yurra & Palmer on the Sierra Mola, between San duis and The coast " a lange tree", lange leave, 2-2/4 feet long, full 2 inher wide with slightly filamentous many: party fruit





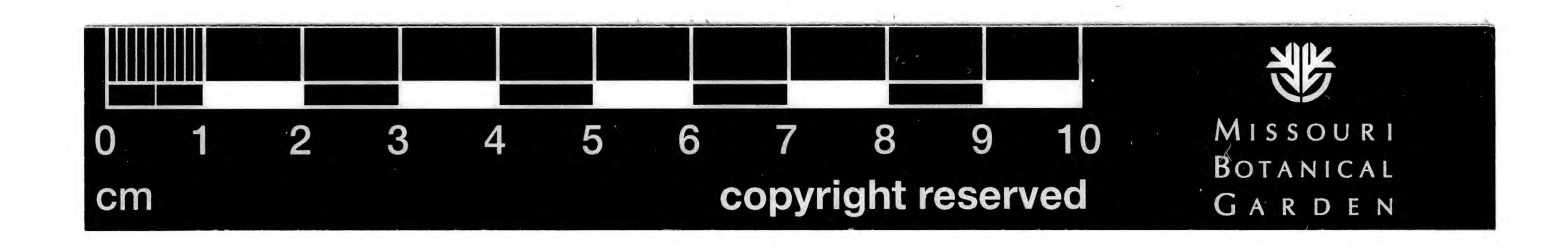


Geo. Engelmann, M. D.,

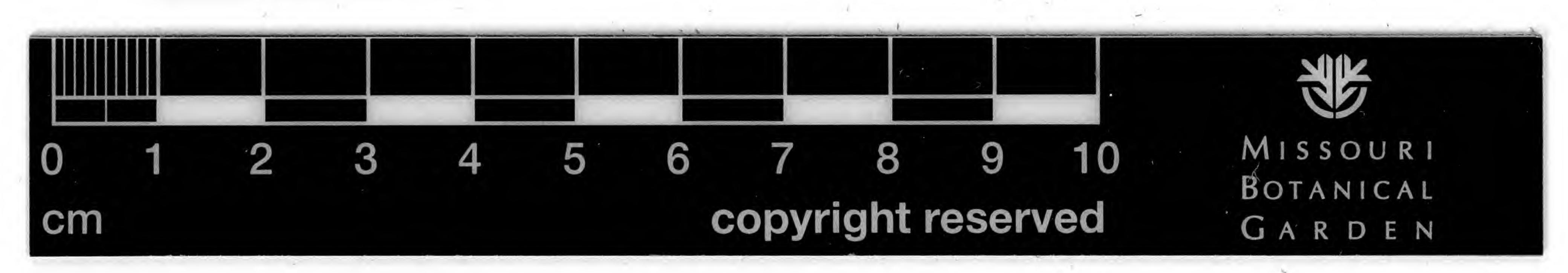


MISSOURI BOTANICAL GALLINGE GEORGE ENGELMANN PAPERS





De Palmen writer i The Juren of the Tierra Mola, Mexito is lange, træ like, brunched, truck swame inches through, leaves Lonly ald ones? I hanging down



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